Early Journal Content on JSTOR, Free to Anyone in the World

This article is one of nearly 500,000 scholarly works digitized and made freely available to everyone in the world by JSTOR.

Known as the Early Journal Content, this set of works include research articles, news, letters, and other writings published in more than 200 of the oldest leading academic journals. The works date from the mid-seventeenth to the early twentieth centuries.

We encourage people to read and share the Early Journal Content openly and to tell others that this resource exists. People may post this content online or redistribute in any way for non-commercial purposes.

Read more about Early Journal Content at http://about.jstor.org/participate-jstor/individuals/early-journal-content.

JSTOR is a digital library of academic journals, books, and primary source objects. JSTOR helps people discover, use, and build upon a wide range of content through a powerful research and teaching platform, and preserves this content for future generations. JSTOR is part of ITHAKA, a not-for-profit organization that also includes Ithaka S+R and Portico. For more information about JSTOR, please contact support@jstor.org.

EXTRUSION OF THE WINTER EGG CAPSULE IN PLANARIA SIMPLISSISSIMA.[1]

FLOYD E. CHIDESTER,

FELLOW IN ANATOMY, THE UNIVERSITY OF CHICAGO.

About the middle of October, 1907, I chanced to note that some of the *Planaria simplississima* in one of my aquaria had developed egg capsules.

I immediately transferred a number of flatworms, including those that had already formed capsules, and a few that had not as yet developed them, to a small aquarium on my desk. While examining one of the planarians and its capsule under the microscope, I saw the movements connected with the extrusion of the capsule.

When first observed, the capsule lay lengthwise of the body in the position indicated in Fig. 1.

Presently the capsule was turned by the movement of the body of the worm until it occupied a position as indicated in Fig. 2,

FIG. 1.

FIG. 2.

FIG. 3.

then slowly came to the position indicated by Fig. 3, that is, at right angles to the longitudinal axis of the body.

This change in position necessarily increased the size of the cavity in which the capsule lay, lacerating the tissue and permitting easy egress.

[1] Contributions from the Biological Laboratory, Clark University.

The planarian then moved slowly forward, the capsule passing along through its body and out at the dorsal caudad region. The rotation of the capsule in the body of the animal apparently aided in breaking the wall of the cavity in which the capsule lay, for there seemed to be no difficulty in the passage through the posterior portion of the body and out near the tail (Fig. 4).

The entire process of extrusion occupied only about thirty minutes.

The next day the wound where the capsule had originally lain was partly closed by contraction of the surrounding tissue, and the wound in the tail region made at the escape of the capsule was obliterated almost entirely.

I was interested to see if the same planarian forms more than

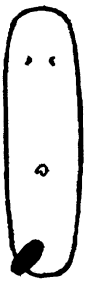

FIG. 4.

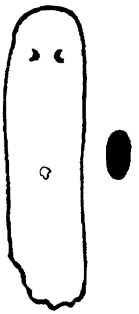

FIG. 5.

one egg capsule, so isolated the animal I had been observing, and examined it several times each day.

In a week complete regeneration was effected. At the end of twenty days from the time I had seen the first capsule, another appeared, evidently formed during the night, and I had the good fortune to observe its extrusion also. The movements were the same as before observed, except that the capsule was extruded on the right side of the body this time.

Other planarians bearing capsules were observed, and in all cases the capsule was rotated immediately before the extrusion

The individual described previously, at the end of about three weeks more, extruded a third capsule.

Kept in a small vial on my desk for two months after this extrusion, the planarian formed no more capsules.

The winter egg capsule of *Planaria simplississima* is a dark brown, elongated object, with a horny covering. It bears nothing so far as I could discover that would aid in holding it fast. Several capsules were opened carefully by means of sharp needles and the contents examined. There were perhaps a score of eggs and many nutritive cells.

Summary.

1. *Planaria simplississima* produces winter eggs.

2. A single individual may develop three or more capsules during the winter.

3. Complete regeneration of tissue lacerated at the extrusion of the egg capsule is effected in about one week.

4. About three weeks elapse between two successive extrusions.